

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

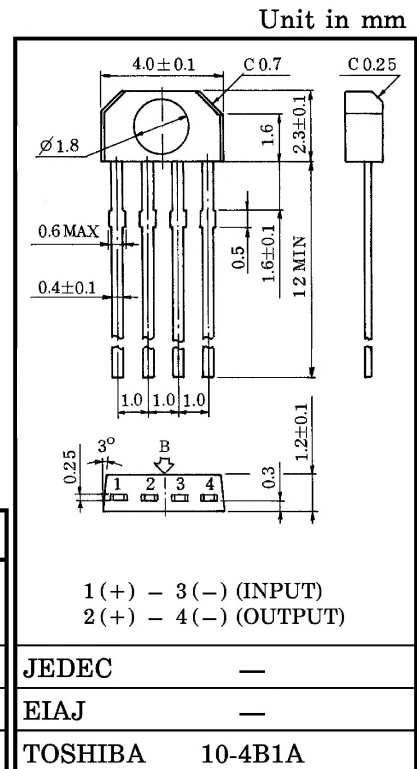
THS119

HIGH STABILITY MOTOR CONTROL.
DIGITAL TACHOMETER.
CRANK SHAFT POSITION SENSOR.

- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; $-55\sim125^{\circ}\text{C}$)
- Excellent Output Voltage Linearity.

MAXIMUM RATINGS ($T_a = 25^{\circ}\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Current	DC	10	mA
	1s	15	
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	$-55\sim125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim150$	$^{\circ}\text{C}$



Weight : 0.06g

ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R_d	$I_C = 5\text{mA}$	450	—	900	Ω
Residual Voltage Ratio	V_{HO}/V_H	$I_C = 5\text{mA}$, $B = 0/B = 0.1\text{T}$	—	—	± 10	%
Hall Voltage (Note 1)	V_H	$I_C = 5\text{mA}$, $B = 0.1\text{T}$	55	—	140	mV
Temperature Coefficient (Note 2)	V_{HT}	$I_C = 5\text{mA}$, $B = 0.1\text{T}$ $T_1 = 25^{\circ}\text{C}$, $T_a = 125^{\circ}\text{C}$	—	—	-0.06	%/ $^{\circ}\text{C}$
Linearity (Note 3)	ΔK_H	$I_C = 5\text{mA}$, $B_1 = 0.1\text{T}$, $B_2 = 0.5\text{T}$	—	—	2	%
Specific Sensitivity (Note 4)	K^*	$I_C = 5\text{mA}$, $B = 0.1\text{T}$	—	27	—	$\times 10^{-2}/\text{T}$
Internal Resistance (Output)	R_{OUT}	$I_C = 5\text{mA}$	580	—	1350	Ω

Note 1 : $V_H = V_{HM} - V_{HO}$ (V_{HM} is meter indication)

Note 2 : $V_{HT} = \frac{1}{V_H(T_1)} \cdot \frac{V_H(T_2) - V_H(T_1)}{T_2 - T_1} \times 100 (\%/^{\circ}\text{C})$

V_{HO} : Residual Voltage

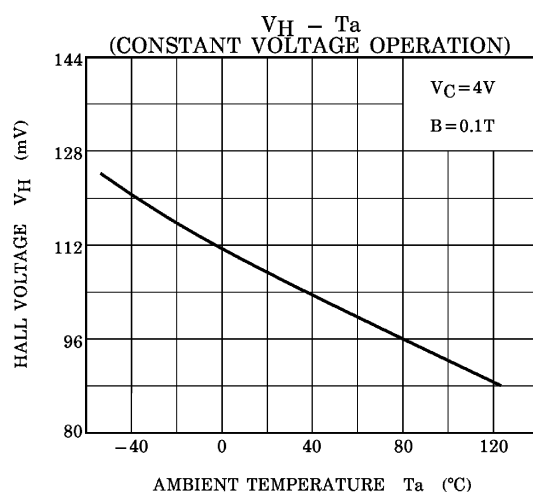
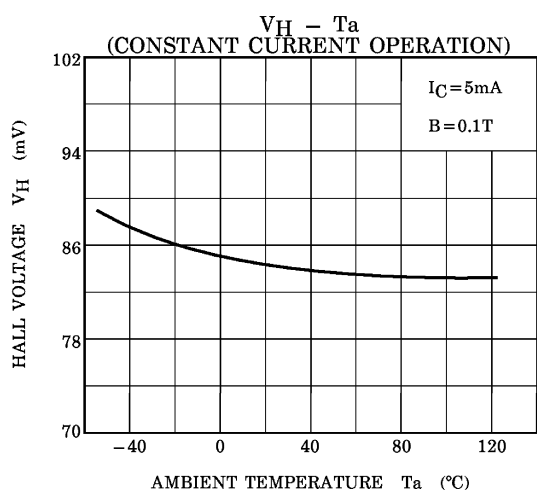
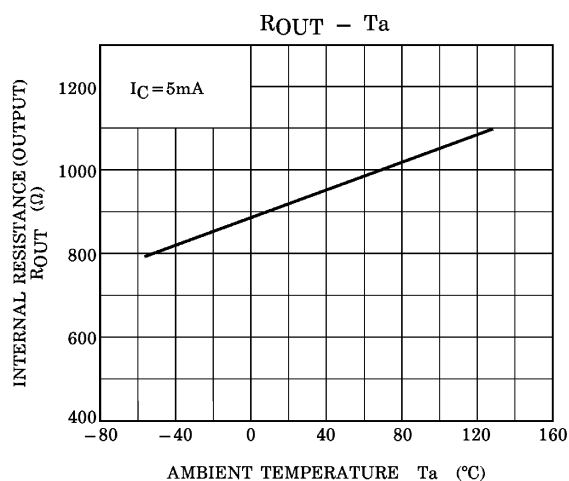
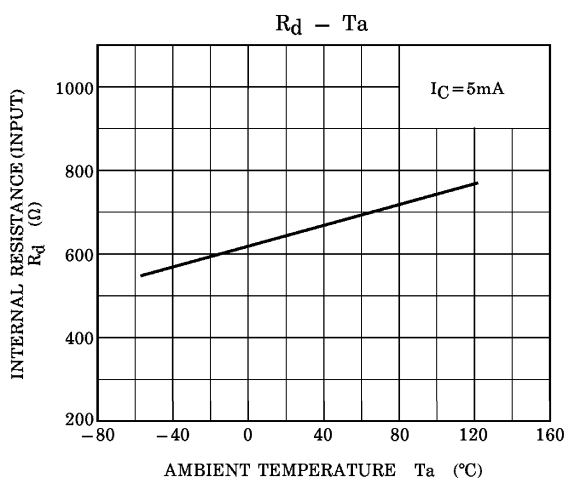
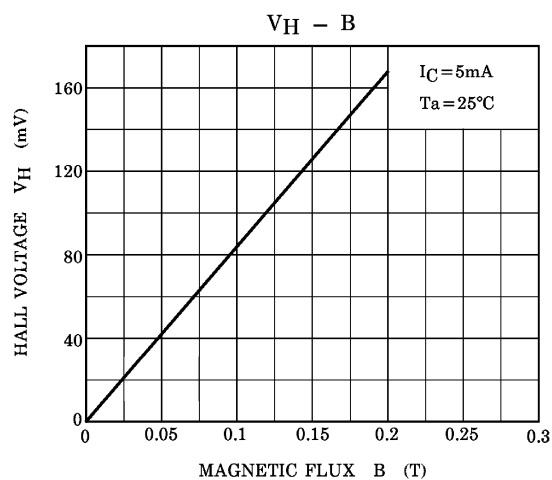
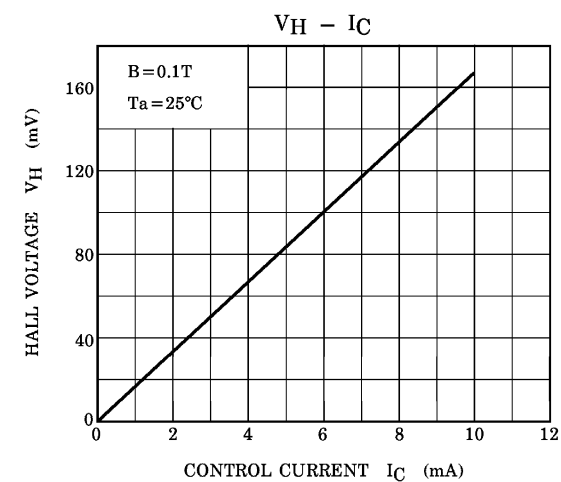
Note 3 : $\Delta K_H = \frac{K_H(B_2) - K_H(B_1)}{1/2 \{ K_H(B_1) + K_H(B_2) \}} \times 100 (\%)$, $K_H = \frac{V_H}{I_C \cdot B}$

K_H : Product Sensitivity

Note 4 : $K^* = V_H / (R_d \times I_C \times B) = K_H / R_d$

961001EAA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.



961001EAA2'

- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.